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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,913	02/22/2002	Larry Edward Byrnes	H-204602	2217
7590	03/01/2004			EXAMINER
CARY W. BROOKS			JIANG, CHEN WEN	
General Motors Corporation			ART UNIT	PAPER NUMBER
Mail Code 482-C23-B21			3744	
P.O. Box 300				
Detroit, MI 48265-3000			DATE MAILED: 03/01/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/081,913	BYRNES ET AL.
	Examiner Chen-Wen Jiang	Art Unit 3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 February 2002.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,2 and 5-7 is/are rejected.  
 7) Claim(s) 3,4 and 8 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 May 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date 4. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rusch (U.S. Patent Number 5,148,986) in view of Daiket et al. (GB 2,111,420).

Rusch discloses a high-pressure thermal spray gun. Referring to Fig. 2, the nozzle member 32 has separate annular gas channels 90,92 therein receptive respectively of oxygen and the combination gas from the combustion gas from respective annular spaces 70,72. The gas channels meet at an annular cavity 86 constituting a mixing zone. The gas channels are respective annular channels separated by a cylindrical baffle 96 disposed in the space between the inner and outer portions of the nozzle member. The burner nozzle 32 extends into a gas cap 14 which has a combustion chamber 42. Rusch discloses a tube 106 with a central passage 108 for powder delivered to the chamber 42. However, Rusch does not disclose a central passage to deliver a feed wire of metallic spray coating material. Daiket et al. disclose central passage can be used to deliver a wire in the same field of endeavor for the purpose of providing coating material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Rusch with a feed wire in view of Daiket et al. so as to deliver coating material.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rusch and Daiket et al. as applied to claims 1 and 2 above, and further in view of Trapani et al. (U.S. Patent Number 5,014,916).

Rusch and Daiket et al. disclose the invention substantially as claimed. However, Rusch and Daiket et al. do not disclose the gas cap having a radially directed outlet. Trapani et al. disclose the angle may be any angle greater than zero and generally should be from about 30° to at least 60 ° in the same field of endeavor for the purpose of discharging material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Rusch and Daiket et al. with a radial angle in view of Trapani et al. so as to discharge material.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rusch and Daiket et al. as applied to claims 1 and 2 above, and further in view of VanKuiken et al. (U.S. Patent Number 5,626,674) or Pank et al. (U.S. Patent Number 5,820,938).

Rusch and Daiket et al. disclose the invention substantially as claimed. However, Rusch and Daiket et al. do not disclose the tubes are rotatable. VanKuiken et al. and Pank et al. disclose the tubes are rotatable in the same field of endeavor. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of VanKuiken et al. or Pank et al. with rotatable tubes in view of VanKuiken et al. and Pank et al.

***Allowable Subject Matter***

5. Claims 3,4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (703) 308-0275.

The examiner can normally be reached on Tuesday-Friday from 7:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen-Wen Jiang  
Primary Examiner

A handwritten signature in black ink, appearing to read "C. Jiang".